7. LAMPIRAN

Lampiran 1. Syarat Mutu Kerupuk Beras (SNI 01-4307-1996)

No	Kriteria Uji	Satuan	Persyaratan	
			Mentah	Sudah digoreng
1.	Keadaan			
1.1	Bau	-	Normal	Normal
1.2	Rasa	-	Normal	Normal
1.3	Warna	-	Normal	Normal
1.4	Kenampakan	-	Renyah	Renyah
1.5	Keutuhan	% b/b	Min. 95	Min. 85
2.	Benda – benda asing		Tidak boleh ada	Tidak boleh ada
3.	Air	% b/b	Maks. 12	Maks. 8
4.	Abu tanpa garam	% b/b	Maks. 1	Maks. 1
5.	Bahan tambahan makanan			
5.1	Pewarna		Sesuai SNI 01-0222-1995 & Peraturan Menkes No 722/MENKES/per/IX/88	
5.2	Boraks		Tidak ternyata	Tidak ternyata
6.	Cemaran logam			
6.1	Timbal (Pb)	mg/kg	Maks. 2,0	Maks. 2,0
6.2	Tembaga (Cu)	mg/kg	Maks. 30,0	Maks. 30,0
6.3	Timah (Sn)	mg/kg	Maks. 40,0	Maks. 40,0
6.4	Seng (Zn)	mg/kg	Maks. 40,0	Maks. 40,0
6.5	Raksa (Hg)	mg/kg	Maks. 0,03	Maks. 0,03
6.6	Arsen (As)	mg/kg	Maks. 1,0	Maks. 1,0
7.	Cemaran Mikroba			
7.1	Angka lempeng total	koloni/g	Maks. 10^6	Maks. 10^5
7.2	E. coli	APM/g	<3	<3
7.3	Kapang	koloni/g	Maks. 10^5	Maks. 10^4

Lampiran 2. *Scoresheet* Uji Pendahuluan

UJI RANKING HEDONIK

Nama : Tanggal :

Produk : Kerupuk Gendar Cincau

Atribut : Warna

Di hadapan Anda terdapat tiga sampel kerupuk gendar. Amati dan bandingkan ketiga sampel tersebut dari kiri ke kanan. Anda boleh mengulangi mengamati dan membandingkan sesering mungkin. Urutkan warna ketiga sampel dari yang sangat Anda sukai (3) hingga yang kurang Anda sukai (1).

Kode Sampel	Skor
……..	…….
……..	…….
……..	…….

♫Terima Kasih♫

UJI RANKING HEDONIK

Nama : Tanggal :

Produk : Kerupuk Gendar STPP

Atribut : Warna

Di hadapan Anda terdapat tiga sampel kerupuk gendar. Amati dan bandingkan ketiga sampel tersebut dari kiri ke kanan. Anda boleh mengulangi mengamati dan membandingkan sesering mungkin. Urutkan warna ketiga sampel dari yang sangat Anda sukai (3) hingga yang kurang Anda sukai (1).

Kode Sampel	Skor
……..	…….
……..	…….
……..	…….

♫Terima Kasih♫

Lampiran 3. *Scoresheet* Uji Ranking Hedonik

UJI RANKING HEDONIK

Nama : Tanggal :

Produk : Kerupuk Gendar

Atribut : Warna

Di hadapan Anda terdapat enam sampel kerupuk gendar. Amati dan bandingkan keenam sampel tersebut dari kiri ke kanan. Anda boleh mengulangi mengamati dan membandingkan sesering mungkin. Urutkan warna keenam sampel dari yang sangat Anda sukai (6) hingga yang kurang Anda sukai (1).

Kode Sampel	Skor
……..	…….
……..	…….
……..	…….
……..	…….
……..	…….
……..	…….

♫ Terima Kasih ♫

Lampiran 4. *Scoresheet* Uji Beda terhadap Kontrol

LEMBAR UJI BEDA

Nama : Tanggal :

Jenis Sampel : Kerupuk Gendar Kode Sampel :

Instruksi :

1. Anda memperoleh dua sampel kerupuk gendar, sebuah kontrol yang berlabel C dan sebuah sampel berlabel 3 digit angka.
2. Gigit dan rasakan sampel kontrol (C)
3. Minumlah air mineral yang telah disediakan.
4. Gigit dan rasakan sampel berlabel tiga digit angka.
5. Indikasikan perbedaan *overall*-nya terhadap kontrol dengan skala dibawah ini.

	Skala	**Tandai (√) untuk mengindikasikan perbedaannya**
Tidak berbeda sama sekali	0	…….
Hampir tidak berbeda	1	…….
Sedikit berbeda	2	…….
Berbeda	3	…….
Sangat berbeda	4	…….
Sangat berbeda sekali	5	…….

Komentar :

♫ Terima Kasih ♫

Lampiran 5. Normalitas Uji Kimia dan Fisik

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	perlakuan	Statistic	df	Sig.	Statistic	df	Sig.
kdr_air_mentah	kontrol	.219	10	.192	.858	10	.072
	STPP 0,1%	.122	10	.200*	.970	10	.888
	STPP 0,2%	.258	10	.058	.767	10	.006
	STPP 0,3%	.127	10	.200*	.953	10	.705
	CINCAU 25%	.148	10	.200*	.969	10	.878
	CINCAU 50%	.170	10	.200*	.963	10	.823
kdr_air_goreng	kontrol	.228	10	.152	.883	10	.140
	STPP 0,1%	.220	10	.186	.829	10	.032
	STPP 0,2%	.155	10	.200*	.927	10	.424
	STPP 0,3%	.204	10	.200*	.906	10	.254
	CINCAU 25%	.141	10	.200*	.972	10	.907
	CINCAU 50%	.153	10	.200*	.907	10	.260

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	perlakuan	Statistic	df	Sig.	Statistic	df	Sig.
kdr_abu_mentah	kontrol	.253	10	.069	.868	10	.096
	STPP 0,1%	.228	10	.150	.920	10	.361
	STPP 0,2%	.119	10	.200*	.967	10	.858
	STPP 0,3%	.131	10	.200*	.921	10	.361
	CINCAU 25%	.244	10	.095	.872	10	.105
	CINCAU 50%	.178	10	.200*	.918	10	.340
kdr_abu_goreng	kontrol	.166	10	.200*	.929	10	.436
	STPP 0,1%	.202	10	.200*	.906	10	.255
	STPP 0,2%	.221	10	.180	.915	10	.319
	STPP 0,3%	.171	10	.200*	.914	10	.310
	CINCAU 25%	.245	10	.089	.901	10	.222
	CINCAU 50%	.189	10	.200*	.951	10	.680

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	perlakuan	Statistic	df	Sig.	Statistic	df	Sig.
kdr_lemak_mentah	kontrol	.238	10	.114	.874	10	.112
	STPP 0,1%	.187	10	.200*	.934	10	.487
	STPP 0,2%	.236	10	.120	.886	10	.151
	STPP 0,3%	.189	10	.200*	.906	10	.256
	CINCAU 25%	.247	10	.085	.852	10	.062
	CINCAU 50%	.154	10	.200*	.964	10	.827
kdr_lemak_goreng	kontrol	.224	10	.170	.843	10	.048
	STPP 0,1%	.136	10	.200*	.962	10	.805
	STPP 0,2%	.165	10	.200*	.909	10	.272
	STPP 0,3%	.145	10	.200*	.956	10	.744
	CINCAU 25%	.257	10	.060	.857	10	.071
	CINCAU 50%	.219	10	.189	.939	10	.546

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	perlakuan	Statistic	df	Sig.	Statistic	df	Sig.
rasio_pengembangan	kontrol	.175	10	.200*	.906	10	.255
	STPP 0,1%	.233	10	.131	.949	10	.662
	STPP 0,2%	.240	10	.109	.858	10	.072
	STPP 0,3%	.255	10	.064	.867	10	.092
	CINCAU 25%	.174	10	.200*	.952	10	.696
	CINCAU 50%	.215	10	.200*	.923	10	.387

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	perlakuan	Statistic	df	Sig.	Statistic	df	Sig.
hardness	kontrol	.196	10	.200*	.890	10	.171
	STPP 0,1%	.237	10	.117	.880	10	.131
	STPP 0,2%	.164	10	.200*	.937	10	.520
	STPP 0,3%	.260	10	.055	.865	10	.087
	CINCAU 25%	.154	10	.200*	.929	10	.434
	CINCAU 50%	.197	10	.200*	.913	10	.301
springiness	kontrol	.261	10	.051	.888	10	.159
	STPP 0,1%	.146	10	.200*	.977	10	.950
	STPP 0,2%	.212	10	.200*	.936	10	.513
	STPP 0,3%	.234	10	.130	.831	10	.034
	CINCAU 25%	.180	10	.200*	.959	10	.771
	CINCAU 50%	.240	10	.108	.893	10	.183
cohesiveness	kontrol	.197	10	.200*	.872	10	.106
	STPP 0,1%	.224	10	.167	.921	10	.367
	STPP 0,2%	.152	10	.200*	.898	10	.210
	STPP 0,3%	.241	10	.104	.900	10	.217
	CINCAU 25%	.189	10	.200*	.925	10	.403
	CINCAU 50%	.223	10	.174	.955	10	.729

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	perlakuan	Statistic	df	Sig.	Statistic	df	Sig.
breakstrength_mentah	kontrol	.232	10	.137	.915	10	.316
	STPP 0,1%	.234	10	.130	.930	10	.445
	STPP 0,2%	.109	10	.200*	.963	10	.819
	STPP 0,3%	.218	10	.197	.880	10	.130
	CINCAU 25%	.170	10	.200*	.948	10	.651
	CINCAU 50%	.111	10	.200*	.994	10	1.000
breakstrength_goreng	kontrol	.147	10	.200*	.951	10	.683
	STPP 0,1%	.261	10	.051	.862	10	.081
	STPP 0,2%	.202	10	.200*	.902	10	.229
	STPP 0,3%	.228	10	.150	.868	10	.094
	CINCAU 25%	.176	10	.200*	.968	10	.873
	CINCAU 50%	.141	10	.200*	.954	10	.710

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Lampiran 6. Post Hoc Test Uji Kimia dan Fisik

kdr_air_mentah

Duncan[a]

perlakuan	N	Subset for alpha = .05			
		1	2	3	4
STPP 0,3%	10	8.0300			
STPP 0,2%	10	8.0350			
STPP 0,1%	10	8.1450			
kontrol	10		8.4950		
CINCAU 50%	10			9.3150	
CINCAU 25%	10				9.7550
Sig.		.211	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 10.000.

kdr_air_goreng

Duncan[a]

perlakuan	N	Subset for alpha = .05			
		1	2	3	4
CINCAU 50%	10	2.1600			
STPP 0,3%	10	2.3050	2.3050		
STPP 0,2%	10		2.4750	2.4750	
CINCAU 25%	10			2.6350	2.6350
STPP 0,1%	10				2.7150
kontrol	10				2.7450
Sig.		.116	.067	.084	.260

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 10.000.

kdr_abu_mentah

Duncan[a]

perlakuan	N	Subset for alpha = .05		
		1	2	3
STPP 0,3%	10	.8648		
STPP 0,2%	10	.8661		
STPP 0,1%	10	.8904		
kontrol	10	.9024		
CINCAU 25%	10		2.9345	
CINCAU 50%	10			3.2345
Sig.		.772	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 10.000.

kdr_abu_goreng

Duncan[a]

perlakuan	N	Subset for alpha = .05		
		1	2	3
STPP 0,3%	10	.7989		
STPP 0,2%	10	.8300		
STPP 0,1%	10	.8906		
kontrol	10	.8950		
CINCAU 25%	10		2.6800	
CINCAU 50%	10			3.0319
Sig.		.300	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 10.000.

kdr_lemak_mentah

Duncan[a]

perlakuan	N	Subset for alpha = .05		
		1	2	3
STPP 0,1%	10	.4300		
STPP 0,2%	10	.4500		
kontrol	10	.5200		
STPP 0,3%	10	.5400		
CINCAU 25%	10		1.4000	
CINCAU 50%	10			1.7900
Sig.		.293	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 10.000.

kdr_lemak_goreng

Duncan[a]

perlakuan	N	Subset for alpha = .05	
		1	2
CINCAU 25%	10	24.3300	
STPP 0,1%	10	24.9300	
STPP 0,2%	10	25.7800	
kontrol	10	26.3000	26.3000
STPP 0,3%	10	26.4000	26.4000
CINCAU 50%	10		28.4900
Sig.		.141	.099

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 10.000.

prosentase_pengembangan

Duncan[a]

perlakuan	N	Subset for alpha = .05		
		1	2	3
CINCAU 50%	10	110.6249		
CINCAU 25%	10	118.1449	118.1449	
STPP 0,1%	10		126.4825	
STPP 0,2%	10		127.1254	
STPP 0,3%	10		127.5699	
kontrol	10			158.1380
Sig.		.133	.085	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 10.000.

hardness

Duncan[a]

perlakuan	N	Subset for alpha = .05	
		1	2
STPP 0,1%	10	462.3499	
STPP 0,2%	10	462.3817	
STPP 0,3%	10	468.7555	
kontrol	10	491.8869	
CINCAU 50%	10		595.8275
CINCAU 25%	10		619.5772
Sig.		.255	.312

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 10.000.

springiness

Duncan[a]

perlakuan	N	Subset for alpha = .05
		1
CINCAU 50%	10	11.1136
STPP 0,3%	10	11.2284
STPP 0,2%	10	11.4496
CINCAU 25%	10	11.5752
STPP 0,1%	10	11.7336
kontrol	10	11.8838
Sig.		.102

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 10.000.

cohesiveness

Duncan[a]

perlakuan	N	Subset for alpha = .05	
		1	2
CINCAU 50%	10	.2085	
STPP 0,1%	10	.2252	
STPP 0,2%	10	.2383	.2383
STPP 0,3%	10	.2402	.2402
CINCAU 25%	10	.2509	.2509
kontrol	10		.2923
Sig.		.138	.052

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 10.000.

breakstrength_mentah

Duncan[a]

perlakuan	N	Subset for alpha = .05			
		1	2	3	4
STPP 0,1%	10	345.8100			
STPP 0,2%	10	358.9750			
STPP 0,3%	10	375.7400			
CINCAU 25%	10		458.2220		
CINCAU 50%	10			524.3070	
kontrol	10				710.3380
Sig.		.125	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 10.000.

breakstrength_goreng

Duncan[a]

perlakuan	N	Subset for alpha = .05			
		1	2	3	4
STPP 0,1%	10	465.1827			
STPP 0,2%	10	470.0651			
STPP 0,3%	10	480.9503			
CINCAU 25%	10		655.5388		
CINCAU 50%	10			733.9073	
kontrol	10				820.5813
Sig.		.553	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 10.000.

Lampiran 7. Uji Friedman untuk Uji Ranking Hedonik

Keterangan :

0 = kerupuk kontrol

1 = kerupuk STPP 0,1%

2 = kerupuk STPP 0,2%

3 = kerupuk STPP 0,3%

4 = kerupuk cincau 25%

5 = kerupuk cincau 50%

Warna

Test Statistics[a]

N	30
Chi-Square	86.476
df	5
Asymp. Sig.	.000

a. Friedman Test

- Asymp. Sig. = 0,000 < 0,05 → ada beda nyata warna diantara keenam produk
- LSD rank $= t_{\alpha/2,n} \cdot \sqrt{p.t.(t+1)/6}$

  $= 1{,}960 \cdot \sqrt{30.6.(6+1)/6}$

  $=28{,}40$
- R0 = 114, R1 = 136, R2 = 149, R3 = 127, R4 = 52, R5 = 52
- R0 –R1 = 22 < LSD → 0=1
  R0 –R2 = 35 > LSD → 0≠2
  R0 –R3 = 13 < LSD → 0=3
  R0 –R4 = 62 > LSD → 0≠4
  R0 –R5 = 62 > LSD → 0≠5
  R1 –R2 = 13 < LSD → 1=2
  R1 –R3 = 9 < LSD → 1=3
  R1 –R4 = 84 > LSD → 1≠4
  R1 –R5 = 84 > LSD → 1≠5
  R2 –R3 = 22 < LSD → 2=3
  R2 –R4 = 97 > LSD → 2≠4
  R2 –R5 = 97 > LSD → 2≠5
  R3 –R4 = 75 > LSD → 3≠4

R3 –R5 = 75 > LSD → 3≠5
R4 –R5 = 0 < LSD → 4=5

Rasa

Test Statistics[a]

N	30
Chi-Square	9.029
df	5
Asymp. Sig.	.108

a. Friedman Test

- Asymp. Sig. = 0,108 > 0,05 → tidak ada beda nyata rasa diantara keenam produk

Kenampakan

Test Statistics[a]

N	30
Chi-Square	82.476
df	5
Asymp. Sig.	.000

a. Friedman Test

- Asymp. Sig. = 0,000 < 0,05 → ada beda nyata kenampakan diantara keenam produk
- LSD rank $= t_{\alpha/2,\infty} \cdot \sqrt{p.t.(t+1)/6}$
  $= 1{,}960 \cdot \sqrt{30.6.(6+1)/6}$
  $=28{,}40$
- R0 = 116, R1 = 138, R2 = 146, R3 = 124, R4 = 53, R5 = 53
- R0 –R1 = 22 < LSD → 0=1
  R0 –R2 = 30 > LSD → 0≠2
  R0 –R3 = 8 < LSD → 0=3
  R0 –R4 = 63 > LSD → 0≠4
  R0 –R5 = 63 > LSD → 0≠5
  R1 –R2 = 8 < LSD → 1=2
  R1 –R3 = 14 < LSD → 1=3
  R1 –R4 = 85 > LSD → 1≠4
  R1 –R5 = 85 > LSD → 1≠5
  R2 –R3 = 22 < LSD → 2=3
  R2 –R4 = 93 > LSD → 2≠4
  R2 –R5 = 93 > LSD → 2≠5
  R3 –R4 = 71 > LSD → 3≠4

R3 –R5 = 71 > LSD → 3≠5
R4 –R5 = 0 < LSD → 4=5

Kerenyahan

Test Statistics[a]

N	30
Chi-Square	.419
df	5
Asymp. Sig.	.995

a. Friedman Test

- Asymp. Sig. = 0,995 > 0,05 → tidak ada beda nyata kerenyahan diantara keenam produk

Overall

Test Statistics[a]

N	30
Chi-Square	34.648
df	5
Asymp. Sig.	.000

a. Friedman Test

- Asymp. Sig. = 0,000 < 0,05 → ada beda nyata *overall* diantara keenam produk
- LSD rank $= t_{\alpha/2,df} \cdot \sqrt{p.t.(t+1)/6}$

  $= 1{,}960 \cdot \sqrt{30.6.(6+1)/6}$

  $=28{,}40$
- R0 = 113, R1 = 124, R2 = 131, R3 = 120, R4 = 71, R5 = 71
- R0 –R1 = 11 < LSD → 0=1
  R0 –R2 = 18 < LSD → 0=2
  R0 –R3 = 7 < LSD → 0=3
  R0 –R4 = 42 > LSD → 0≠4
  R0 –R5 = 42 > LSD → 0≠5
  R1 –R2 = 7 < LSD → 1=2
  R1 –R3 = 4 < LSD → 1=3
  R1 –R4 = 53 > LSD → 1≠4
  R1 –R5 = 53 > LSD → 1≠5
  R2 –R3 = 11 < LSD → 2=3
  R2 –R4 = 60 > LSD → 2≠4
  R2 –R5 = 60 > LSD → 2≠5
  R3 –R4 = 49 > LSD → 3≠4

R3 –R5 = 49 > LSD → 3≠5
R4 –R5 = 0 < LSD → 4=5

Lampiran 8. Uji Dunnett untuk Uji Beda terhadap Kontrol

Tests of Between-Subjects Effects

Dependent Variable: tingkat_beda

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	88.000[a]	34	2.588	2.118	.001
Intercept	1548.800	1	1548.800	1267.359	.000
panelis	68.200	29	2.352	1.924	.006
jenis_kerupuk	19.800	5	3.960	3.240	.008
Error	177.200	145	1.222		
Total	1814.000	180			
Corrected Total	265.200	179			

a. R Squared = .332 (Adjusted R Squared = .175)

Multiple Comparisons

Dependent Variable: tingkat_beda

Dunnett t (2-sided)[a]

(I) jenis_kerupuk	(J) jenis_kerupuk	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
STPP 0,1%	kontrol	-.27	.285	.816	-.99	.46
STPP 0,2%	kontrol	.23	.285	.882	-.49	.96
STPP 0,3%	kontrol	.70	.285	.062	-.03	1.43
CINCAU 25%	kontrol	.33	.285	.657	-.39	1.06
CINCAU 50%	kontrol	.60	.285	.140	-.13	1.33

Based on observed means.

a. Dunnett t-tests treat one group as a control, and compare all other groups against it.